

NOTES ON LOUISIANA BOTANY AND BOTANISTS, 1718–1975

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Editor's note.—The present paper was written ca. 1992 while the author, formerly at Tulane University, was Research Associate at the Missouri Botanical Garden, St. Louis. It was intended for a volume of essays honoring botanical artist Margaret Stones, but the collection was never published and the manuscript was abandoned. Before the intended submission, Ewan asked me to make corrections and suggest modifications, which I did. With those few and minor changes made, Ewan's notes on Louisiana's botanical history seemed to me well worthy of publication as a stand-alone contribution. For Joseph A. Ewan (1909–1999) see A.S. Bradburn, *Sida* 19:219–222 (2000); L.J. Dorr, *Taxon* 49:107–111 (2000); C. Wolf, *Plant Sci. Bull.* 46:14 (2000). For Ewan bibliography, see L.J. Dorr and D. Holland, *Arch. Natl. Hist.* 27:307–334 (2000). I thank A.S. Bradburn, L.J. Dorr, E.G. Sundell, and J.W. Thieret for reviewing the manuscript and offering valuable suggestions.

A concern for history has always been regarded as a mark of a civilized man. He who knows only his own generation remains always a child.

— These two maxims, the first from historian Louis B. Wright, the second from college president George Norlin, read from sides of the same coin: perception comes from perspective and from the wide-angled lens of history.

We review the lives and botany of a select few of Louisiana's naturalists-artists-collectors who have left records, sometimes only sketchily, in books, letters, and dried plant specimens from 1718 to 1975. This essay is only an introduction to the history of botanical exploration in the state. Well-known figures are mentioned, but barely remembered persons will be particularly noticed on the premise that search warrants may be posted. My annotated *Bibliography of Louisiana botany*, listing 384 entries to the year 1950, is the base of this review.¹ A supplement to the bibliography by Eric Sundell brought the coverage to 1975 with an additional 433 titles, chiefly of recent taxonomic revisions.

The first naturalist to visit Louisiana was Antoine Simon Le Page du Pratz, who as a traveling architect and engineer observed the flora and fauna.² He arrived 25 August 1718 reporting that New Orleans existed “only in name.” Though du Pratz died in 1775, in a real sense I met him through the enthusiasm of Stanley Clisby Arthur and his bookseller, Joseph Harmanson, by the publication of a composite altered English translation of du Pratz's *History of Louisiana* based on the London edition. This New Orleans imprint of 1947, important for its annotations and a topical index, had a press run of only 600 copies. Du Pratz had gathered notes of plant and animal names and uses from his early contacts with his slave girl of the Chitimache tribe, purchased soon after his

arrival. Louisiana natural history began when she whacked an alligator on the snout as it approached his campfire. From crocodiles to cockroaches, which he remarked are relished by house cats, his narrative is interesting. Five chapters report on forest trees and other botanical subjects. Although he mentions about fifty trees, no specimens collected by him are known. He noticed mangroves as he entered the delta,³ stating that they were "very common all over America." If you believe you know our flora, try identifying every tree in du Pratz's forest.

Benjamin Smith Barton, Philadelphia naturalist-physician, loaned his copy of du Pratz's "Louisiana" to Meriwether Lewis in 1803. Lewis returned the book four years later after its trip to Oregon.⁴ Du Pratz stayed in Louisiana sixteen years, sometime on the Bayou St. John, at an Indian village above New Orleans, and at Natchez. His *Histoire* was written from memory after his return to France. Opinions differ: biohistorian Elliot Coues, though he edited Lewis and Clark's travels and others, did not produce an annotated edition. Coues concluded du Pratz's "matter is very wild and of no account."⁵ I suggest his is a clue book, to be verified.

Perhaps the best known of early French travelers on the Mississippi River was Pierre Charlevoix (1682-1761),⁶ Jesuit missionary-historian whose visit in 1720 was first published in 1744, but not Englished until John Shea published its six volumes between 1866 and 1872. Charlevoix cited black vomit, *Ilex vomitoria*, cassina,⁷ then known by the Indian name apalachina, which altered into Apalachicola, the present Florida river and town. Understandably it was plants then used by Man, black vomit, sweet gum, and wax myrtle, that entered Charlevoix's text.⁸

Before plants were collected and kept in cabinets, they were more or less carefully observed. From this description what do you suggest was Bossu's plant: "a tree that grows in Louisiana that bears a fruit similar to a banana that the natives call *hasseminier*. Savages cover their cabins with the bark and also use it to make little boxes called *cassot*, in which to put fruits."⁹ Bossu also says the bark was used to make a trumpet. What tree was it? *Asimina*? Jean-Bernard Bossu (1720-1792), son of a surgeon, was in wars in Italy, moved to the marines, left for Louisiana in 1750 but then was assigned to Illinois country. He lived with the Akanas or Quapaw Indians near the mouth of the Arkansas River, staying there for seven years. Bossu returned to Louisiana in 1758, then for a third time as a private citizen, 1770-1771.

The early travels of Bossu were first translated into English by a German, Johann Reinhold Forster,¹⁰ who later would ship with Capt. Cook on his Second Voyage. Samuel Derris Dickinson in 1982 provided a fully annotated rendition of Bossu's *New Travels of 1770-1771*.¹¹ As had Charlevoix, Bossu mentions the plants related to man's use, but with more detail: cassine, *Ilex*; candleberry, *Myrica cerifera*; ginseng, *Panax quinquefolius*; red laurel, *Persea borbonia*; white

laurel, *Magnolia virginiana* (?); sassafras, *Sassafras albidum*; sweet gum or copala, *Liquidambar styraciflua*; palmetto, *Sabal minor*; "American tea," *Ceanothus americanus*; and yucca, *Yucca* sp.

Scarcely noticed in the history of our plant introductions is *Gaillardia*, known in the South as blanket-flower. In 1786 a six-page paper was published by the Paris Academy of Sciences, the first scientific paper devoted solely to a Louisiana genus. Fougeroux de Bondaroy described *Gaillardia pulchella* as cultivated from Louisiana seed in France by one d'Essales.¹² Whether a cultivated voucher was preserved I do not know. *Gaillardia* was a sensation when it flowered in Europe. Three botanists, Lamarck, Buc'hoz, and l'Héritier raced its description into print in 1788. With the happy exception of Philip Miller's Chelsea gatherings, garden-grown specimens are dubiously labeled or lost.¹³ The intense competition among nurserymen to seize the market was not peculiar to France; it will inevitably complicate the effort to fix types of such discoveries as *Gaillardia*. The effort to improve the wild plant and the resulting cultivars further add to the botanical bouillabaisse. Where was that *Gaillardia* seed collected? I suggest on the Opelousas prairies.

We know William Bartram's oak-leaf hydrangea whereabouts. The description of his Florida experiences with bellowing alligators at the Alachua savannah, dramatically sketched in action, are classic. These drawings and important albums of plant specimens, preserved in the Natural History Museum, London, were reported with annotations in 1968.¹⁴ That Bartram suffered great pain from an injury and eye infection meant that his "plan of peregrinations" through Louisiana had to be curtailed, and he collected no specimens. Nevertheless he had pressed westward to the Pearl River country, stayed four or five weeks at the seat of an Englishman named Rumsey on what Bartram called "Pearl Island," which was wiped away by hurricane years ago. He recuperated under the roof of "friendly" Rumsey whose fruit trees had reached "the utmost degree of perfection." His eyes "having sufficient strength to endure the open daylight" he set off from Pearl Island westward in a "handsome large boat with three negroes to navigate her." Using today's maps we trace Bartram's route through the Rigolet's, along Lake Pontchartrain's north shore, across the mouth of the Tangipahoa River through Pass Manchac to Lake Mauripas, to Amite River and an outpost on the Mississippi River. Turning north on the river he lodged at the plantation of William Dunbar,¹⁵ a Scottish gentle-man naturalist whose other plantation near Natchez is better known. He traveled in a "neat cypress boat with three oars" to Pointe Coupee on the west side of the river, then on as far as Port Hudson, admiring the White Cliffs. He finally reached White Plains, an isolated prairie, by horseback, 27 October 1775. Bartram was impressed by sassafras with straight trunks up to 40 or 50 feet. There he saw "great and beautiful whooping cranes." He then retraced his route in Louisiana, his eyes still

painful, and returned to Carolina. If you would follow his journey through the southern states, pick up the "naturalist's edition" of *Travels* by Bartram's Boswell, Francis Harper.¹⁶

Although Claude Robin was a student of Jussieu, and the author of the first description of the Louisiana flora, it is Rafinesque who translated and revised Robin's work, publishing it as *Florula Ludoviciana*. Claude C sar Robin¹⁷ visited Martinique and Santo Domingo en route to Louisiana. Details of his travels in Louisiana are vague, but he wrote long detailed plant descriptions, noted folk names and uses which amounted to 238 pages of his *Voyage* (Paris, 1807). *Gaillardia* is described but without comment on its dramatic introduction twenty years earlier. Robin's text deserves critical study. A three-column table comparing Robin's, Rafinesque's, and what we think their sometimes cryptic phrases mean, would be welcome indeed.¹⁸ Though we have yet to discover any herbarium records of Robin's, we value his contribution. Incidentally, our black locust, *Robinia*, commemorates Jean Robin, a 16th century French botanist, not Claude Robin.

An actor in the widescreen drama of Audubon's life, though he is barely mentioned in Audubon's writings, was the young artist Joseph Robert Mason.¹⁹ Mason is unnoticed in botanical history for his plant backgrounds. He was born in Cincinnati in 1807 and was a pupil at thirteen in Audubon's drawing class in Cincinnati in the spring of 1820. The instructor must have been impressed with the lad's talents for he took him with him on the flatboat trip to New Orleans. "As the cumbersome ark drifted downstream," to borrow Marshall Davidson's words, Audubon was busy shooting birds and sketching for his planned *Birds of America*. Meanwhile Mason was collecting samples of the plants he would incorporate with the bird drawings, often later added to Audubon's originals. They arrived at Bayou Sara, West Feliciana Parish, in January 1821. Eight days later they were in New Orleans where Audubon added bird drawings to his portfolio, meanwhile making portraits of townspeople to meet his expenses. But when Audubon received an offer from a wealthy plantation owner's wife, Lucretia Pirrie, to teach her daughter drawing, he accepted and they set off for Oakley Plantation near St. Francisville. It was there that Joseph Mason would make most of his Louisiana drawings. For example, Mason drew loblolly pine, *Pinus taeda*, and Audubon signed the drawing "James Pirrie's plantation, Louisiana, July 10, 1821. Plant J.R. Mason."²⁰ To my knowledge this was the only instance when Audubon recorded Mason's part in his work. Mason drew *Magnolia grandiflora* in fruit on 5 October 1821, but Audubon did not indicate on the drawing that it was Mason's art. I like Mason's jessamine, *Gelsemium sempervirens*. His red-flowered *Iris fulva* is no match for Margaret Stones', but it is an interesting record for the species about twenty years after it was first collected by Aloysius Enslen who was then gathering for Prince Lichtenstein.²¹ Audubon wrote to his wife Lucy in 1822, carefully distinguishing Mason's talent

from his own, that Joseph Mason "draws flowers better than any man probably in America." Understandably Mason chafed under Audubon's unwillingness to recognize his artistic talents in what was already Audubon's grand plan. On 23 August 1822, Mason left Audubon's employ at Natchez and returned to Cincinnati. Whether it was Mason who later worked in Philadelphia for William P.C. Barton has not been confirmed.²²

Joseph Mason deserves a study and a census of his Louisiana drawings that will, however, be nettled with confusion, partly on dates, but perennially on attribution. The 1966 American Heritage edition of Audubon's watercolors with Marshall Davidson's introduction, and assistance from the late Harold W. Rickett of New York Botanical Garden, will be your best source for the investigation.²³

A familiar spring umbellifer about New Orleans is chervil, as the genus *Chaerophyllum* is known in Europe; ours is *C. tainturieri* described by William Jackson Hooker in 1835 from Louis Tainturier's specimen.²⁴ I found some hints about the Tainturier family in New Orleans' St. Louis cemetery no. 1, aisle 3, that suggest they came from Santo Domingo; no one has put all the dates and doubts into a believable account. S.W. Geiser suggests that Tainturier was professor of mathematics at the College d'Orleans, located at the corner of Hospital and St. Claude streets in New Orleans. Eight letters survive in the Hooker correspondence, the last, 18 April 1836, informs of the dispatch of some plants collected "at 60 miles above New Orleans and which, in great part, are different from those which were sent twelve years ago." This Tainturier essay-in-the-waiting would assist the systematic botanist, and gratify the historian: botanists do not live alone. The College d'Orleans, founded in 1811, represented French influence as Louisiana's first institution of higher learning. One commentator, however, remarked that the Creole cared little for schooling, and so the college "sank in a sea of troubles" and was closed in 1826.²⁵

The natural sciences have always flourished with the hand of what Mark Catesby called "encouragers" or the patrons. Little known are the agents who forwarded the collections, held the mail, the true confreres. Joseph Barabino, who kept a small apothecary shop at 144 Old Levee Street, was the agent for Lesueur and Say.²⁶ The French historian of natural history E.T. Hamy left us an account of Barabino:

a zealous naturalist who was especially interested in entomology, but whose equipment was quite incomplete. Lesueur helped his new friend with advice, furnished him with pins, cork sheets, etc., etc. The Barabino [sic] drugstore was the gathering place of several devotees of natural history. It was near the leading market, and everything that was strange in the vicinity of the city was brought there. Lesueur dreamed of making it the center of a society similar to that of Philadelphia. Barabino spoke several languages and correspondence with foreign countries could be carried on with ease.²⁷

Barabino collected *naturalia* for Bory de Saint-Vincent and for the Lyceum of Natural History in New York from the year 1825.²⁸ When the paleontologist of Philadelphia's Academy, Samuel George Morton, named the Cretaceous fossil

Inoceramus barabini he remarked "I name this species in memory of the many favors I have received from my friend Joseph Barabino, Esq., of New Orleans."²⁹ Lesueur's portrait of Barabino in the archives of New Harmony bears a note by Robert J. Usher, librarian of the old Howard Memorial Library at Lee Circle: "he died while quite young from fever contracted in the swamps in which he was searching for ferns." The year was 1834.

At Oxford University's Botany Department I was shown the portrait of Charles Giles Bridle Daubeny (1795–1867),³⁰ who kept a pair of organ-grinder's monkeys at the gate to the Botanic Garden next door to where he lived, in the Gatehouse. These lively guards set off an alarm at unwanted visitors. Daubeny, the son of a rector at Stratton in Gloucestershire, a graduate of Winchester and Magdalen College, was intended for a medical career, but his classes at Edinburgh aroused his interest in geology, especially in volcanology. After travels on the continent he began, when twenty seven, to teach chemistry at Oxford, and two years later was made Professor of Botany in 1834. He visited Canada and the United States, touring Louisiana 5–28 March 1838. His *Journal of a tour* (1842) in an edition of 100 copies "for private circulation," accounts for why so few know Daubeny's American sojourn. New Orleans, Opelousas, "Lake Chicou" come into his narrative but it was a lingering winter that year, and so his plant notes are fewer than for other states he visited. In Daubeny's *Popular geography of plants* (1855) he comments that magnolias "must be seen in America before we can form any conception of their splendour. A petted Magnolia nailed up against a south wall in an English garden, gives a very poor idea of the magnificent trees to be seen there, sometimes 90 feet in height ... whilst the profusion of their large white blossoms, just delicately tinted, is beautifully contrasted by the background of shining dark green leaves."³¹ In a letter to WJ. Hooker, Daubeny wrote "I am distracted by too many objects," and that Hooker would find scant botanical notices in his book.³² Daubeny's *Journal* deserves, indeed invites with its honest commentary, a rebirth by some publisher, though some of us may not agree when on leaving New Orleans he said "I never left a large city with less regret."

Thomas Drummond wrote his patron William Jackson Hooker at Glasgow from New Orleans on the 5th of January 1832 "I take this opportunity of a vessel going direct for the Clyde to forward what collections I have made during the past season."³³ Born in Perthshire, Scotland, Drummond fell into the orbit of William Jackson Hooker, then Professor of Botany at Glasgow. Perhaps lowly mosses had encapsulated their friendship. Though Professor Hooker reported on Drummond's field work in America in the pages of the *Journal of Botany* soon after his letters arrived, to read the eleven closely packed letters of Drummond, now preserved at Kew, is to sense the high tide of botanical exploration. Drummond was collecting plants (and other *naturalia*) for subscribers whom Professor Hooker had contacted on his behalf. On the 20th of May 1832

Drummond wrote "I have been extremely busy" and asked Hooker to negotiate only eight or ten specimens for each species. To keep up anticipations, however, Drummond often mentioned plants he had collected, for example, *Acacia*, *Allium*, *Crinum*, and *Zizania*. Drummond told Hooker, "you frequently find a single specimen & probably don't find it again so that it is impossible to have all the collections [of a single number] full."³⁴

At the close of his 1832 season in Louisiana, Drummond hoped he would be able to proceed north from Covington to Natchez through the pine woods north of Lake Pontchartrain where he found what he called "a few pretty plants," namely two species of *Rhexia* and two of *Sabatia*. The extreme barrenness of this country, however, disappointed him. He mentioned that he had found *Drosera brevifolia* and *Pinguicula lutea*.

Before Louisiana, Drummond had been with Sir John Franklin in the Canadian Arctic, and then in the Canadian Rockies collecting both mosses and flowering plants. Yes, this was the "Drummond" of Drummond's phlox, named by Hooker.³⁵ His phlox was collected in southeastern Texas, grown from seed, the flowers described by Hooker as "brilliant rose-red or purple varying exceedingly on different individuals in intensity." Drummond, however, did not live to admire his introduction. Hooker regretted that although the phlox "bids fair to be a great ornament to the gardens of our country [it must] serve as a frequent memento of its unfortunate discoverer." Drummond's plan after exploring Florida had been to sample the exciting Cuban flora, but his last days in the spring of 1835 will never be known. The British consul at Havana sent Drummond's death certificate to Professor Hooker. Geiser wrote "had [Drummond] made Texas his permanent home the history of Texas botany would have been written very differently," and that he was a man of "tremendous physical energy, of persistence . . . forgetful of self . . . it seems an unnecessarily cruel fate that kept [Drummond] from bringing to completion his work in Texas."³⁶

An international enterprise founded by a physician and a professor-parson of the German town of Essingen related to a botanist of Louisiana. A Natural History Traveling Society, or the *Unio Itineraria* of Württemberg, was founded by Dr. Ernst Steudel and Professor Christian Hochstetter, both of Essingen. The *Unio Itineraria* collected specimens from correspondents: William Darlington of West Chester, Pennsylvania, and the French naturalist Jean Louis Berlandier, who collected in Texas, were among the members. By exchange-sale, specimens were distributed to cabinets especially in Europe. Dr. Joseph C. Frank,³⁷ born in Rastadt, who had published a local flora of his native town in 1830, was deputed by the Society to travel and collect in the United States. According to Stuckey, Dr. Frank botanized in southwestern Ohio and the *Unio Itineraria* distributed sets of his plants, 100 sheets for 11 florins each. These were an important source of information on 19th Century Ohio flora. The Kentucky botanist

Dr. Charles Short says the Grand Duke of Baden commissioned Frank to collect and investigate the flora of the southern states, but his Louisiana stay was brief.³⁸ He and his wife were stricken with yellow fever, and Frank died two months later in New Orleans in November 1835. He was fifty three. His wife returned to Germany with his collections, and they were distributed in 1836 by *Unio Itineraria*.

Josiah Hale, born in Virginia and a private pupil of Rafinesque, graduated at Transylvania with a medical degree in 1822.³⁹ He then moved to Port Gibson, Mississippi, an important shipping center where he practiced medicine and collected the local flora. He took off two years for poor health to botanize in Louisiana until 1825 when, as a physician in residence, he moved to Josiah Johnson's plantation twenty miles from Alexandria and continued to collect plants. Hale's first letter to John Torrey in 1838 began his association with Torrey and Gray.⁴⁰ They proposed the genus *Halea* in 1842, but forty years later Gray decided it was indeed a species of *Tetragonotheca*. Occasionally a Hale label would catch Gray's eye, for example, "*Ulmus crassifolia* Nuttall. Grows in swamps, subject to inundation, Red River - flowers late in Sept. and ripens fruit in Oct. It will be seen by the present specimen] that the expression 'ramis teretibus' does not universally apply."⁴¹ Hale's plants were not numbered, and so after Charles Short and others had divided the original specimens and exchanged a portion, the origin "Louisiana" was often all that accompanied the specimen.

The keen interest in botanical exchanges of this era may be seen, for example, as when Hale wrote to Torrey, "at the request of my friend Dr. Leavenworth, I have put up & shipped on the brig Mary Ann, Capt. Wade, a box of specimens of plants growing in the neighborhood of Alexandria."⁴² On another occasion Hale wrote to George Engelmann from Canton, Mississippi, "some weeks ago I put on board the steamer Woodruff, at New Orleans, for St. Louis, a small box of specimens of plants for Dr. Mead of Augusta, Ill., directed to your care, by his instructions."⁴³ Hale took early retirement, married, and invested in local enterprises. When his fortune of 100,000 dollars plunged to 10,000 dollars, he moved to New Orleans to begin private practice again. During these six years in New Orleans he joined Riddell and others to found the New Orleans Academy of Sciences on 1 April 1853, and was elected the first president. Heart trouble set in in January 1856, and Hale died 21 July. In the Academy's Minute Book is written, Dr. Hale "has, perhaps done more to make known the peculiarities of the flora of Louisiana than all others taken together."⁴⁴ Hale's particular interests were grasses and sedges, two groups not enamored of by his friend Riddell.

Elsewhere I have taken the historical heights reached by two American botanists for whom two 14,000-foot peaks in Colorado have been named, Gray's and Torrey's, for they dominated nineteenth century systematics.⁴⁵ In the middle decades so many novelties were being discovered in the Great West that

they nearly ran out of names of botanists to commemorate. William Marbury Carpenter⁴⁶ did not collect in Colorado or California, but the stunning genus *Carpenteria*, of which there is but a single species, named by Torrey, commemorates an endemic saxifragaceous shrub of the southern Sierra Nevada. Carpenter was born in West Feliciana Parish 25 June 1811, about twelve miles from St. Francisville. The Carpenters had lived in Louisiana since 1773, and on his mother's side, the Marburys since 1795. At eighteen Carpenter was admitted at West Point as a cadet, but with a rheumatic heart he returned home just before graduation. Soon after leaving West Point he accepted a professorship of Natural Science at Centenary College, Jackson, Louisiana, then called College of Louisiana, teaching botany, geology, "and some other things." He botanized widely in Louisiana on vacations, occasionally with students. In 1832, for example, he collected around Opelousas.

Carpenter wrote to John Torrey, "You will perhaps find some of my statements respecting the size of plants in the south, as inclining to extravagance. If, however, you have traveled in our delta, you will at once know that it is not exaggeration. For example, in vol. 1. p. 260 *Flora* [N]orth A[merica] you state as follows of the *Berchemia volubilia* ["supple-jack" of the bayous, *Berchemia scandens*] climbing to the height of 12 or 15 ft. In Louisiana, trees exceeding 100 ft in height are sometimes completely covered by it," and "I believe that vines of it are common here which would measure more than 200 ft, and would have a circumference near the root, of 6 to 9 inches."⁴⁷

It is not recorded when Carpenter collected his M.D. degree, but he practiced about Jackson and from 1842 taught materia medica at the Medical School of Louisiana in New Orleans. Charles Lyell, British geologist, visited New Orleans, and we have his story: "Dr. William Carpenter, although in full practice as a physician, kindly offered to accompany me [to examine the geology around Balize, in the Mississippi delta] and his knowledge of botany and geology, as well as his amiable manners, made him a most useful and agreeable companion."⁴⁸ They had carried Charlevoix's maps of the passes, published in 1743, and had found them remarkably accurate.

Before his death at thirty-seven years Dr. Carpenter published on geology in Silliman's *Journal*. Perhaps biographical details are buried in Benjamin Silliman's papers at Yale. Fewer than one hundred Carpenter specimens now survive in the Tulane University herbarium. They were once part of the New Orleans Academy of Sciences collection assembled by the physician-botanists Riddell and Hale.

Who was the leading botanist of Louisiana in the Nineteenth Century, who engaged the important collectors Josiah Hale and William Carpenter to cooperate with him in what might have become the first synopsis of the state flora? John Leonard Riddell. Riddell will remain a riddle. More writers have discussed Riddell than any other figure in our story, yet no full biography of this man

with details of his various enterprises has ever appeared, though Karlem Riess came close.⁴⁹ Perhaps the very incubus of records—twenty eight manuscript diaries at Tulane—have hampered the effort. “At the time of his death, 1865, [Riddell] was considered by many to be the foremost American scientist.”⁵⁰

After botanical instruction from Amos Eaton, whom we must admit was one of the most colorful figures in our history of science,⁵¹ Riddell was actively botanizing in Ohio, and trying to sell his bound book-like herbaria to citizens as well as to teachers in female academies. He advertised in the Marietta newspaper that he was willing to collect plants for sale: dried specimens for conversation pieces! In 1833 he began corresponding with John Torrey and sent him herbarium specimens. His 116-page *Synopsis of the flora of the western states* published in Cincinnati in 1835—no small synopsis—was the basis for his botanical activities in Louisiana after his arrival in New Orleans in 1836 to teach chemistry officially, and natural history actually at the Medical College of Louisiana. In many ways we are reminded of Rafinesque. Besides Riddell’s catalogue of plants growing spontaneously in Franklin County, Ohio, his six-page “Geological ramble ... near Cleveland,” and his abstract on *Oscillatoria* structure, by 1847 he was also lecturing at the People’s Lyceum of New Orleans on “Orrin Lindsay’s plan of aerial navigation with a narrative of his explorations in the higher regions of the atmosphere and his wonderful voyage around the moon.” Riddell’s lecture was printed, and it has been suggested that he anticipated H.G. Wells by some half-century. Remember that Riddell’s invention of the first practical binocular microscope was noticed in the eleventh edition of the *Encyclopaedia Britannica*.

Riddell served as Federal postmaster of New Orleans during Jefferson Davis’s Confederate years. When the Confederate postal system was started 1 June 1861, prepayment of all postage in cash was demanded. It was then that Riddell circumvented Confederate action by issuing “provisional stamps” and “fractional currency” in denominations of one cent to five dollars—all to facilitate the Federal cause.⁵² Riddell was undoubtedly a spy for the Union. Small question but that Riddell’s botanical work had to be set aside. And where is the largest collection of Riddell’s specimens to be consulted? Not in the United States, but at the Natural History Museum, London. Through A.H.G. Alston’s efforts it had acquired from a provincial museum in the Midlands a set of 320 specimens, mostly of Louisiana plants (although the bound volume is titled “Ohio”). Paris had 290 Riddell sheets, acquired with the Durand herbarium,⁵³ from which Riddell specimens were distributed.⁵⁴ The Fielding Herbarium at Oxford University contains about 70 specimens, possibly acquired by Prof. Daubeney.⁵⁵ On 27 March 1838 Daubeney met Riddell on his American tour, and though he recorded his New Orleans visit in his *Journal*, strangely he does not mention Riddell.

In this country Tulane University probably has the largest series, roughly

125 sheets, these surviving from the old New Orleans Academy of Sciences herbarium.⁵⁶ Gray Herbarium, Torrey Herbarium, Philadelphia Academy, Darlington Herbarium at West Chester, Missouri Botanical Garden, and Smithsonian Institution, all have Riddell specimens. His conflict with Gray, the leading figure in American botany at the time and the only botanist to win a head in the Hall of Fame in New York City, made history. In 1851 Riddell completed a synoptical account of the plants of Louisiana which he submitted to the Smithsonian Institution for publication. Joseph Henry sent the manuscript to Asa Gray for consideration, a customary practice. Though no correspondence relative to Gray's rejection has ever been located, the evidence is found in the Gray Herbarium. Gray scissored and inserted pages from Riddell's manuscript into the copy of *Synopsis of the flora of the western states* which Riddell had presented to him. There will also be found neatly folded manuscript pages in packets on herbarium sheets of the respective species described in Riddell's manuscripts.⁵⁷

Handicapped by residence in a city which Lyell characterized as gripped by cultural paralysis, plagued by two attacks of yellow fever in 1837 and 1853, weakened by the animosities of his colleagues, bound by high costs of local printing and by protracted delays in mail deliveries with his botanical correspondents, Riddell labored under impressive difficulties. Yet, as James Cassedy expressed it, "he combined luck, native talent, and audacity to achieve considerable scientific success in antebellum United States."⁵⁸ Granted, his native talents were less than those of an Engelmann or a Chapman, two practicing physicians who achieved more substantial botanical successes. For all its imperfections Riddell's *Flora* would have stabilized the knowledge of Louisiana botany in the mid-nineteenth century.

"The scientific man is always on the road, never at journey's end," as T.D.A. Cockerell wrote, "we necessarily work with incomplete materials and more or less inadequate tools. We have to build on foundations of ten poorly established, and no matter how clever or industrious we may be, posterity will have to revise and correct much of what we have done. So true is this, that it is easy to become discouraged, and many do fall away and give up the quest."⁵⁹

Americus Featherman collected plants in Louisiana from 1858 until 1875. He was born in 1822 in Oettingen, a county in Germany, and came to the United States when seventeen years of age. According to John Hendley Barnhart he studied medicine at Paris, practiced medicine in Missouri and studied and practiced law.⁶⁰ He published three reports on agricultural botany while teaching in the Louisiana State University between 1869 and 1872. For some reason he returned to Europe in 1875 and lived in Paris. Over one hundred of his plant specimens are reported to be in the Paris herbarium. Asa Gray disposed of twelve proposed new species described from Louisiana by Featherman. One, *Sabatia oligophylla*, Featherman illustrated in water color.⁶¹

The New Orleans World's Industrial and Cotton Centennial Exposition of 1884 brought together botanists with their exhibits. John Gill Lemmon and his wife Sara Allen Plummer Lemmon exhibited Pacific Coast conifers, pressed ferns, and wild flowers.⁶² George Vasey submitted grasses, and Joseph Finley Joor, who had lived in Texas for a decade, exhibited the woods of Texas. Joor, born on the Comite River, Parish of East Baton Rouge, graduated from the New Orleans School of Medicine, served as Quarantine Surgeon at Ship Island Station, and practiced at Thibodaux.⁶³ Facing poor health he moved to the prairies of Texas, first at Harrisburg, then at Birdston. While at Birdston he wrote to George Engelmann for some plant identifications: "I have now on hand specimens of 100 doubtful plants, including several Cruciferae, a Claytonia, a Callirrhoe."⁶⁴ He listed a dozen genera, all evidence of his botanical acuity. Joor was appointed Assistant Commissioner for Texas to prepare exhibits of woods and Texas plants for the Exposition.

It was Paul Tulane's gift of \$10,000 to establish a natural history collection, shortly after his million dollar educational endowment in 1884, that brought Joor to the Tulane University of Louisiana. He began his assistant curatorship by arranging the 120 mounted birds, small-case habitat groups of chimpanzee, platypus, Kodiak bear, etc., and salvaging the herbarium including collections of Hale, Riddell, and Carpenter which had suffered from neglect in the New Orleans Academy of Sciences. He was appointed Professor of Botany in 1889 though without teaching duties. Tulane President Johnson urged Joor to go to Avery Island when a new shaft in the salt mines was exposing fossils and artifacts. Joor reported that the McIlhennys "most agreeably and hospitably received me."⁶⁵ Fossils collected there were divided between Tulane and Mr. Edward Avery McIlhenny; among them were two mastodon teeth, bones of equus, and of a giant sloth. For five years Professor Joor, no longer practicing medicine, cared for the Tulane Museum, continuing to collect plants mostly on his limited free time, and corresponded with botanists, among them George Vasey, A.W. Chapman, and William Trelease of the Missouri Botanical Garden. The early Joor specimens from the New Orleans Academy of Sciences were not among those purchased by the Garden in 1897.⁶⁶ Joor died at the age of forty-four. His daughter, Harriett, who taught art at Newcomb College and who retired to Lafayette, Louisiana, asked if I would accept her father's letters on behalf of Tulane. Gladly I did. Those 103 pieces, including a postcard from Asa Gray, now in Tulane archives, relive Joseph Joor's enthusiasm for plant study.

Perhaps the best known Louisiana botanist of the 1890's was the clergyman Abbé Augustus Barthélemy Langlois, born in Charanay, Loire, France, 24 April 1832. He attended the "Grand Seminary" of Lyons, and after 1855 the Seminary of Cincinnati, Ohio, and was ordained in 1857. He was appointed rector of Plaquemines Parish, which extended 110 miles along the Mississippi River. On his arrival at his new home he found the bloody cassock of his predecessor who

had been murdered when called out during the night. Pastor Langlois served thirty years at Pointe à la Hache, amassing a reference library and comprehensive collections—his large herbarium went to Catholic University of America, but was later dispersed to several other institutions.⁶⁷ In 1887 Langlois moved to St. Martinville in the Teche country. That year he published what he called his provisional *Catalogue* of the Mississippi Delta flora.⁶⁸ In it he enumerated nearly 1200 seed plants, 650 fungi, 96 mosses, and 29 hepatics. Lichens were not listed, but over 200 numbers of them had been collected by the time of his death in 1900.

Langlois' fourteen letters to E.L. Greene from 1894 to 1897 tell of his "very happy voyage to Europe" in 1896 when he examined the herbaria at Geneva. "I only discovered at Boissier's Herb. my Louisiana lichens partly determined by John Mueller of Argau before his death."⁶⁹ He had also seen the "famous bryologists" Capt. Ferdinand Renauld and Jules Cardot. Langlois' nephew, rector at Breaux Bridge, Louisiana, wrote after his father's death that Langlois' library of "at least 300 volumes" included the thirty-six volumes of Job Bicknell Ellis's *North American fungi*.⁷⁰ According to Saccardo's *Sylloge fungorum* there are only 50 sets of Ellis in the world. Shirley Tucker has published a gazetteer of Langlois' collection sites and a bibliography.⁷¹

What's in a name? How about Bush? How about a "country storekeeper and botanist" as the New York Times headlined its story.⁷² When Benjamin Franklin Bush, born in Columbus, Ohio, 21 December 1858, was seven, his mother moved him to Independence, Missouri.⁷³ The Missouri Pacific Railroad had just been opened from St. Louis to Kansas City, and so Benjamin and his mother rode the first train. Passenger pigeons were in the woods, Carolina parakeets ("parquets" could be caught with a coat or hat), and prairie chickens were abundant. The Bushes moved to Courtney, sixteen miles east of Kansas City in the early 1890s. In Courtney he sold shoes, overalls, plugs of tobacco, and groceries. Yet Bush was able to prepare herbarium specimens. Thousands of sheets are in leading herbaria—*Index Herbariorum* lists twenty-seven herbaria: the Gray Herbarium has 3400, and the National Herbarium over 5000. His early contacts with Asa Gray and George Engelmann launched his traveling career, and William Trelease's contacts were critical. In 1899 Bush began a decade of exploration for the Arnold Arboretum with Professor Sargent relying on his field knowledge to ferret out the hawthorns then under pursuit. Ernest Jesse Palmer, who wrote a portrait of Bush, met him in 1900. Both botanists had collected in Louisiana. It is Bush's article in Sargent's *Garden and Forest* in 1897 about his search for corkwood, a shrub or small tree to thirty feet, that still challenges.⁷⁴ Corkwood, *Leitneria floridana*, discovered in swamps in southeast Missouri, was described by the Apalachicola botanist A.W. Chapman, friend of Asa Gray and John Torrey. Before Bush's discovery *Leitneria* had been known only from its first collection in Florida, and a dubious Drummond specimen from southeast

Texas. Trelease sent Bush to search Bayou Goula, White Lake, Louisiana, but though he "examined thoroughly" the cypress swamps he failed to find any *Leitneria*. He considered the "largest development" of *Leitneria* to be in the "big Lake, in se. Mo. and ne. Arkansas," where shrubs were "about twelve feet in height with stems nearly four inches in diameter." Who will find the first *Leitneria* in Louisiana?

Reginald Wodehouse Somers Cocks took his M.A. at Trinity College, Cambridge, with first honors in classics.⁷⁵ He must have been influenced especially by Kew-trained curator at the Cambridge Botanic Garden, Richard Irwin Lynch, indeed a linchpin. Lynch had raised the garden's collection almost to that of Kew for its "botanicks."⁷⁶ Cocks first arrived in Canada in 1890, but soon came to Louisiana. There are specimens at Tulane dated "Felician, March 1892," and by 1898 he was active in the Louisiana Society of Naturalists. By May 1906 he was corresponding with E.L. Greene, then at the Smithsonian, inquiring about Langlois' localities, and by December he had sent a "small package of plants" for Greene's attention. "I was very often able to get help from Dr. Mohr and Father Langlois" Cocks wrote, "but since their death there has been no botanical investigator anywhere in these parts."⁷⁷

The year 1908 was a flowering for Professor Cocks, for two reasons: he met Harvard dendrologist Charles Sprague Sargent, and after one year at Louisiana State University he accepted the Ida Richardson Chair of Botany at Tulane. This chair had been created by the wife of the Dean of the Medical School, Tobias Gibson Richardson.⁷⁸ Cocks was already familiar with the Tulane herbarium, citing records in his paper in the Society of Naturalists' *Proceedings* as early as 1900.⁷⁹ It is the Sargent-Cocks circulation that was so significant to our botany, the systole and diastole that kept specimens in motion and diagnosed. I was instructed in Louisiana botany by the over 300 letters written by Charles Sargent to Professor Cocks, "my companion in annual journeys of exploration through the forests of Louisiana,"⁸⁰ from 1908 until 1926 when their lives and letters ceased. These letters are alive with the pursuit of hawthorns, oaks, and hickories, which Sargent conjectured he had missed in the first edition of his *Manual* (1905). For example, Sargent wrote Cocks, "in August 1901 Bush collected at Minden a sterile branch of a distinct-looking" species of *Crataegus* subgenus *Crus-galli*, adding a tease: "Is not Minden a place to explore?"⁸¹

Sometimes the "Cock's spur" is not always on the hawthorn. Sargent: "Britton says the ... Nutmeg Hickory is called Bitter Walnut in Louisiana. This must be a fake story for in the first place the kernal [sic] is not bitter, and secondly is so rare in Louisiana that it cannot have secured a popular name."⁸² Sargent wrote: "Thank you again for all your kindness to me during my visit to Louisiana. I never had a better week or saw finer or more interesting trees, and we must make another trip together before long."⁸³ After that 1910 letter they had many trips together. Some of you may know the house at the corner of Carrollton and

Freret streets built in 1849 by Nathaniel Wilkinson in Gothic cruciform design, the house snuggled behind a curtain of trees and shrubs. When Charles Low lived there Professor Sargent was house guest on his visits to New Orleans.

When I came to New Orleans in 1947, Percy Viosca was a local watchword. He had supplied teaching materials for biology classes, was with the State Department of Conservation, Curator of Reptiles, etc., in the State Museum, New Orleans, and was a President of the Louisiana Academy of Sciences. "Louisiana's first major herpetologist probably was Percy Viosca, 1892-1961."⁸⁴ He published a benchmark paper in the journal *Ecology* on "Louisiana wetlands and the value of their wildlife and fisheries resources."⁸⁵ He had given a radio talk sponsored by the Smithsonian Institution, this published in *Scientific Monthly*.⁸⁶ Viosca trumpeted Louisiana in 1933 in "a handy reference for tourists . . . and nature lovers generally," published in New Orleans.⁸⁷ This is still a very "handy" guide for tracing names now hushed by progress, and the folding map of landform-vegetation by L.E. Boesch is useful.

But it was Viosca's careful study of Louisiana irises that calls our wider attention. Edgar Anderson, that zealous researcher at the Missouri Botanical Garden, gave Viosca front-page recognition in his book *Introgressive hybridization* published in 1949.⁸⁸ Introgressive hybridization was a botanical topic that in a decade translated the genetics of hundreds of American plants into printer's ink. Viosca's study of Louisiana irises had soberly reduced the panoply of described "species" proposed by J.K. Small and E.J. Alexander into what Viosca interpreted as but a few freely interbreeding species. There were ninety-five taxa in Small's *Manual* of 1933. Edgar Anderson had known irises in the field while collecting and researching the genus *Tradescantia* with Robert Woodson. Paul Percy Viosca was a field naturalist who knew the sound of frogs, of birds in fleeting migration, and the non-migratory snakes we met in the bayous. I recall my visit to his bedside when he imprinted a thought: "When I have so much knowledge of the fauna and flora, why should this cancer snuff out my life?" He was seventy-two when he died a few weeks later.⁸⁹

Versatile Clair Alan Brown, associated with Louisiana State University from 1926 for forty-two of his seventy-nine years, was first a forester and a mycologist studying wood-rotting fungi.⁹⁰ Later he wrote on Louisiana's fossil pollen record, her paleogeologic history, revegetation after flood waters, what plants grow on Indian mounds and the extent of middens, weeds in rice fields, and mushroom poisoning among cattle. He contributed nine chatty essays to *Louisiana Conversation Review*. His *Louisiana trees and shrubs* introduced our woody plants to hundreds of young biologists and vacationers.⁹¹ He liked ferns and found their soil requirements interesting, co-authoring with Donovan Correll a book on ferns of the state.⁹² Their attractively illustrated guide, published in an edition of only 500 copies, considers where and why ferns grow in a region we often think of as fern-poor.

Clair was a smiling botanist, optimistic, and thoroughly social. When he married Clara Douglas, serials librarian at the University in 1963, his interest in petrified wood joined her enthusiasm for lapidary handicraft. Clair knew this state. I remember how he warned me on a field trip along Thompson Creek to watch for quicksands. His handy manual *Wild flowers of Louisiana*, illustrated with his own full-color photographs, will be a record of our flora of 1972 a hundred years from now.⁹³

The life so short, the craft so long to learn,
Th' assay so hard, so sharp the conquering ...

Chaucer, Parlement of Foules, ca. 1382

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My thanks to so many librarians, archivists, and biologists who have aided my efforts in tracing our history. If this review is rewarding, thank my wife, Nesta,⁹⁴ my companion in zealous research.

NOTES

1. Joseph Ewan, "A bibliography of Louisiana botany," *South W. Louisiana J.* 8 (1967 [1968]) 2–83 (hereinafter cited as Ewan, *Bibliog.*) Eric Sundell, "Supplement 1951–1975," *Tulane Stud. Zool. Bot.* 21 (1979) 3–66. *Naturalists of the Old South*, planned on the model of *Rocky Mountain naturalists* (Denver, 1950) but never published, amounts to seven pamphlet boxes of 5×8 cards, recording quotations from correspondence, notes from archives, museum records, holographs from S.W. Geiser, etc. (hereinafter cited as *Old South*). "Historical sketch of Louisiana botany" by R.S. Cocks, *Proc. Louisiana Soc. Naturalists* (1897–1899) 69–84 (cited as Cocks, *Sketch*). "Some notes on the botanical history of Louisiana" by R.J. Usher, *Home Gardening* 1 (6) (1941) 12–13, 20–21; (7) 12–13, 19–20, and (8) 12–13. *Ferns and fern allies of Louisiana* (Baton Rouge, 1942) by C.A. Brown and D.S. Correll (cited as Brown and Correll, *Ferns*). John Francis McDermott published two symposia with relevant chapters: J. Ewan, "Scientist on the frontier," *Research opportunities in American cultural history* (Lexington, 1961) 81–101, and "French naturalists in the Mississippi Valley," *French in the Mississippi Valley* (Urbana, 1965) 159–174 (cited as Ewan, *French naturalists*). Roster of 70 persons in J. Ewan, "Letters from Charles Sprague Sargent to Reginald Somers Cocks, 1908–1926," *J. Arnold Arbor.* 46 (1965) 1–44, 122–159, 324–361, 411–444 (cited as *Sargent-Cocks letters*). J. Ewan, "Historical problems for the working taxonomist," *Taxon* 18 (1969) 194–203 (cited as Ewan, *Problems*).
2. Antoine Simon Le Page du Pratz, *History of Louisiana*, Joseph G. Tregle, ed. (Baton Rouge, 1975). *Dictionary of Louisiana biography*, Glenn R. Conrad, ed. (Lafayette, 1988) (cited as *DLB*). Cocks, *Sketch* 69–80. Ewan, *Bibliog.* 8. Ewan, *French naturalists* 164.
3. T. Becket, London, 1774 ed. (New Orleans [1947]) 223. Black mangrove, formerly *Avicennia nitida* Jacq., now *A. germinans* (L.) L. See E.L. Little Jr., *U.S.D.A. Agric. Handb.* 541 (1979) 59.

4. P.R. Cutright, "Lewis and Clark and Du Pratz," *Bull. Missouri Hist. Soc.* 21 (1964) 31-35. *Quarter of a millenium*, Edwin Wolf II and Marie Elena Korey, eds. (Philadelphia, 1981) fig. 90. p. 111. The copy now in the Library Company, Philadelphia. For B.S. Barton see J. Ewan and N. Ewan, *Benjamin Smith Barton, keystone naturalist and physician in Jeffersonian America* (Missouri Bot. Garden Press, St. Louis, 2005, in press).
5. Elliot Coues, *Birds of the Colorado Valley* (Washington, 1878) 582.
6. Charles E. O'Neill, *Charlevoix's Louisiana, selections from the History and the Journal* (Baton Rouge, 1977). Useful documented account of Pierre F.X. de Charlevoix, 1682-1761, in B. Boivin, "La flore du Canada en 1708," *Provancheria* 9 (1977) 223-297. D.P. Penhallow, *Trans. Roy. Soc. Canada* 5 sect. 4 (1888) 51-52. Ewan, *Bibliog.* 8.
7. A.H.G. Alston and R.E. Schultes, "Studies of early specimens and aspects of *Ilex vomitoria*," *Rhodora* 53 (1951) 273-280.
8. Economics of wax myrtle awaits study. Ewan, *French naturalists* 166. Ewan, *Bibliog.* 76.
9. Samuel Dorris Dickinson, *New travels in North America by Jean-Bernard Bossu, 1770-1791* (Natchitoches, La., 1982) 117.
10. Johann Reinhold Forster, transl. *Travels through that part of North America formerly called Louisiana*, by M. Bossu (London, 1771) 2 vols. Plant identifications by Forster, 1:347-355, to which is added Forster's "Catalogue of the known plants, shrubs, and trees in North America" as they relate to works of Catesby, Kalm, and Gronovius. Ewan, *Bibliog.* 9.
11. See note 9 for Dickinson, *Bossu*. For synopsis of Bossu editions see Ewan, *Science* 139 (1963) 478-479.
12. Auguste Denis Fougereux de Bondaroy, *Hist. Acad. Roy. Sci. Mém. Math. Phys. (Paris)* 1786 (1788) 5. Ewan, *Bibliog.* 10.
13. Hazel le Rougetel, *Chelsea gardener, Philip Miller 1691-1771* (Portland, Ore., 1990) 182.
14. J. Ewan, *William Bartram, botanical and zoological drawings, 1756-1788* (Philadelphia, 1968) 154-167.
15. William Dunbar, 1749-1810, "Scottish-born scientist and Mississippi planter," took up his plantation near Natchez in 1792. Dunbar befriended Bartram's friend, Alexander Wilson. See Clark Hunter, *Life and letters of Alexander Wilson* (Philadelphia, 1983) 101, 373, and Wilson's letter, 358.
16. Francis Harper, *Travels of William Bartram, naturalist's edition* (New Haven, 1958). From this Harper classic, a paper-bound edition with background essay by Robert McC. Peck (Peregrine Smith, Salt Lake City, 1980) is reliable for maintaining original pagination of the 1791 edition.
17. For Claude César Robin, 1750-post 1807, see F. Monaghan, *French travelers in the United States, 1765-1932* (New York, 1961) 81.
18. C.S. Rafinesque, *Florula Ludoviciana* (New York, 1817) is an abridged and augmented translation of Robin's "Flore Louisianaise" in his *Voyage dans l'intérieur de la Louisiane, de la Floride occidentales ... 1802 [to] 1806* (Paris, 1807) 3:325-538. See J. Ewan, editor's introduction, reprint Rafinesque, *Florula Ludoviciana* (New York, 1967) i-xl.
19. Essential reference: Stanley Clisby Arthur, *Audubon, an intimate life of the American*

- woodsman (New Orleans, 1937) 273, the basis of Irving T. Richards, "Audubon, Joseph R. Mason, and John Neal," *Amer. Lit.* 6 (1934) 122–140, by correspondence with Arthur. Current study: Lois Elmer Bannon and Taylor Clark, *Handbook of Audubon prints* (Gretna, La., 1991) 57, Mason's backgrounds, 91–108. Francis Herrick, *Audubon the naturalist* (New York, 1917) 2:69 refers to Thomas Sully's report of Mason working in Philadelphia. The "Joseph R. Mason, 1808–1842" in George C. Groce and David H. Wallace, *Dictionary of artists in America, 1564–1860* (New Haven, 1957) 428, singularly makes no reference to Mason's association with Audubon!
20. Marshall B. Davidson, Introduction, *Original water-color paintings of John James Audubon for the Birds of America* (New York, 1966) plate 211, but Mason's drawing of *Hydrangea quercifolia*, plate 83, as usual makes no record of his participation.
 21. Aloysius Enslen, Austrian gardener whom Frederick Pursh had known in Europe. He collected for Prince Lichtenstein as far south as New Orleans, where he first found the copper-colored *Iris* "on the banks of the Mississippi River near New Orleans," but the records in Vienna evidently lost. Enslen's discoveries, including the *Iris*, were circulated in the Philadelphia coterie. John Lyon listed the "sp. nova. copper coloured flowers," then undescribed, on his broadside of garden novelties from America (*Trans. Amer. Philos. Soc.* 53 (pt. 2) (1963) 57). The latest account on Enslen is J. Ewan, editor's introduction, reprint, F. Pursh, *Flora Americae Septentrionalis* (Cramer, Vaduz, Germany, 1979) 15–16. See also J. Ewan, "From Calcutta and New Orleans, or, tales from Barton's greenhouse," *Proc. Amer. Philos. Soc.* 127 (1983) 125–134. The type specimen of *Iris fulva* Ker. was destroyed in the bombing of World War II. See also Margaret Stones, *Flora of Louisiana ... with botanical descriptions by Lowell Urbatsch* (Louisiana State Univ. Press, Baton Rouge, 1991).
 22. William Paul Crillon Barton, 1786–1856, M.D. and Prof. of Botany, University of Pennsylvania, drew 49 native species, colored the plates himself, for his *Vegetable materia medica of the United States* (Philadelphia, 1817–18) but it would have been Barton's ambitious three-volume *Flora of North America* (Philadelphia, 1821–23) that possibly involved Joseph Mason. Barton's wife, Esther Sergeant, assisted with the drawings of both works. See J. Ewan, "History of Philadelphia horticulture: chronology, dramatic personae," *From seed to flower, Philadelphia 1681–1876* (Penn. Hort. Soc., 1976) 59, 65.
 23. See note 20. Davidson introduction, xi–xxix. Color reproductions from the Audubon collection at the New York Historical Society.
 24. Louis Francois Tainturier, fl. 1825–1840, market-gardener (?), correspondent of W.J. Hooker, whose eight letters, 1824–1836, are preserved at Kew, lived at 47 Burgundy St., acc. Gibson's *guide and directory, 1838*, and Michel's *New Orleans directory, 1840*. The scattered references to Tainturier in Torrey and Gray, *Flora* 1:15, the collections in the Philadelphia Academy, and in T. Nuttall, *Sylva* 1:194, represent correspondence with Hooker and not the unlikely correspondence of Tainturier with American botanists. Ewan, *Old South*. W.J. Hooker, Nov. 21, 1825, to John Richardson, in part, "I am even keeping in view our projected Flora of British N. America and am extending my correspondence to all parts of that Continent, in order that our portion of it may in due

- time, be the better illustrated. I have an excellent correspondent even at New Orleans, who sent me large collections from that neighbourhood & some way up the banks of the Mississippi." Hooker-Richardson letters, Kew.
25. For College of Orleans see Joseph A. Breau, *Publ. Louisiana Hist. Soc.* 7 (1915) 136-142. Ewan, *Old South*. Ewan, *French naturalists* 173. Could there be a connection between the "herbarium of 8000 plants well dried and well preserved" and Tainturier? Joseph Lakanal announced at the College of Orleans in 1822. See John Charles Dawson, *Lakanal, the regicide* (University, Ala., 1948) 133.
 26. S.H. Scudder, *Psyche* 8 (1899) 306-308. Harry B. Weiss and Grace M. Ziegler, *Thomas Say, early American naturalist* (Springfield, Ill., 1931) cites six Barabino references.
 27. E.T. Hamy, *Travels of the naturalist Charles A. Lesueur in North America, 1815-1837*, Milton Haber, transl. (Kent, Ohio, 1968) 66.
 28. Ewan, *Bibliog.* 38, 52, 56. For more on Lesueur and Bory see M. Ly-Tio-Fane, *Le géographe et le naturaliste à l'île-de-France, 1801, 1803* (Port Louis, Mauritius, 2003).
 29. S.G. Morton, *Synopsis of the organic remains of the Cretaceous group of the United States* (Philadelphia, 1834) 63. Though Morton did not botanize, Asa Gray memorialized him in the celastaceous genus *Mortonia*, in *Plantae Wrightianae* 1 (1852) 34, "to that most eminent American naturalist, the late Samuel George Morton, author of *Crania americana*." For sidelights on the "American Golgotha," see Frank Spencer, *Trans. Stud. Coll. Physicians Philadelphia* ser. 5, 5 (1983) 321-338, and W.J. Bell, Jr. in C.C. Giles, ed., *Dictionary of scientific biography* 9 (1974) 540-541.
 30. Daubeny, son of an Anglican cleric, is identified by Arnold Thackray as a chemist and geologist, not as a botanist (in C.C. Giles, ed., *Dictionary of scientific biography* 3 (1971) 585-586. At the Oxford meeting of the British Association for the Advancement of Science when the Bishop of Oxford hoped to conclude the sessions by "smashing Darwin," Daubeny supported the *Origin*. See Leonard Huxley, *Life and letters of Joseph Dalton Hooker* (London, 1918) 1:521. The Catalogue of the archives of the Oxford Botany Department, now deposited in the Bodleian Library, lists 135 Daubeny titles. Ewan, *Old South*.
 31. *Popular geography of plants; or a botanical excursion round the world* (L. Reeve, London, 1855) 113. The work was edited by Daubeny, with the author given as "E.M.C." A ms record equated this with Emily M. Cox, but the National Union Catalog ascribes the authorship to Maria E. Catlow, author of popular works on insects and shells.
 32. C.G.B. Daubeny, Oxford, 4 March 1843, to W.J. Hooker, Hooker correspondence, Kew.
 33. Thomas Drummond's Louisiana and Texas herbarium records were the first widely distributed among the world's botanical centers. Some of the best narrative in the field of botanical exploration, Samuel W. Geiser, *Naturalists of the frontier* (Dallas, 1948) ed. 2. 55-78, provided a background.
 34. T. Drummond, New Orleans, 20 May 1832, to W.J. Hooker, Hooker correspondence, Kew.
 35. *Bot. Mag.*, plate 3441. 1835. Geiser provides a map of Drummond's collecting localities.
 36. *Ibid.* 1948, 78.

37. The collections of Joseph C. Frank, 1782–1835, M.D., in the Missouri Botanical Garden herbarium were acquired with the Bernhardt Herbarium. George Engelmann, St. Louis, 17 Feb. 1842, to Asa Gray, comments on Frank's botanizing in western Pennsylvania (Asa Gray correspondence, Harvard). Ronald L. Stuckey, *Castanea* 39 (1974) 263–272, on Frank's Ohio collections. Agnes Chase, *Contrib. U.S. Natl. Herb.* 28 (1929) 32, reported the type specimen of *Paspalum frankii* Steud., labeled "New Orleans, 1837," is in the Drake Herbarium, Paris.
38. See R.L. Stuckey, *Scientific publications of Charles Wilkins Short* (New York, 1978) i–v. Ewan, *Problems* 200. Ewan, *Bibliog.* 20.
39. J. Ewan, "Josiah Hale, M.D., Louisiana botanist, Rafinesque's pupil," *J. Soc. Bibliogr. Nat. Hist.* 8 (1977) 235–243.
40. Ibid. 237. Ewan, *Bibliog.* 25. *Sargent-Cocks letters*, numbers 140, 192, 246.
41. Specimen simply annotated by Asa Gray "Louisiana, Hale" Gray Herbarium, Harvard.
42. Ibid. 238. J. Hale, New Orleans, 6 June 1838, to John Torrey, Torrey correspondence, N.Y. Botanical Garden.
43. J. Hale, Canton, Mississippi, 7 Nov. 1855, to G. Engelmann. Engelmann correspondence, Missouri Botanical Garden. For Samuel Barnum Mead, 1799–1880, M.D., see the overlooked privately printed Alice L. Kibbe, *Afield with plant lovers and collectors* (Carthage, Ill., 1953) 5–42.
44. New Orleans Academy of Sciences archives now preserved at Howard-Tilton Memorial Library, Tulane.
45. J. Ewan. "Only ten feet less." In James E. Guncke, ed., *Current topics in plant science* (New York, 1969) 155–166.
46. R.S. Cocks, "William Marbury Carpenter, a pioneer scientist of Louisiana," *Tulane Graduates' Mag.* 3 (1914) 122–127. Also John Duffy, ed., *Rudolph Matas history of medicine in Louisiana* (Baton Rouge, 1962) *passim*.
47. W.M. Carpenter, Jackson, La., 15 June 1839, to John Torrey, Torrey correspondence, N.Y. Botanical Garden, courtesy of Susan Fraser, archivist.
48. Charles Lyell, *Second visit to the United States of North America* (New York, 1850) 2:111. Carpenter accompanied Lyell in March, 1846, about New Orleans, 2:106–107, and his observations around Port Hudson, 2:138–139, and the hydrography of the Mississippi River, 2:188–189, were reported by Lyell.
49. J. Karlem Riess, "John Leonard Riddell," *Tulane Stud. Geol. Paleontol.* 13 (1977) 1–110. John Duffy, ed., *Rudolph Matas history of medicine in Louisiana* (Baton Rouge, 1962) 2:85–86, *passim*. Ralph W. Dexter, "Early career of John L. Riddell as a science lecturer in the nineteenth century," *Ohio. J. Sci.* 88 (1988) 184–188. Ewan, *Problems* 200. *DLB*.
50. Otto Juettner, *Daniel Drake and his followers* (Cincinnati, 1909) 202–203. J.L. Riddell, to Amos Eaton, quoted by Wm. M. Smallwood, *New York History* 18 (1937) 183.
51. "Prior to Agassiz, no other individual contributed nearly so much to American culture through the actual study of natural history as did Amos Eaton" Wm. M. and Mabel S.C. Smallwood, *Natural history and the American mind* (New York, 1941) 283, in a

- notable chapter, 249-284. When publication of Eaton, *Manual of botany* (Albany, 1817) was rejected, 63 Williams College students underwrote its printing (262).
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64. Engelmann letters, Missouri Botanical Garden archives.
65. Joor papers, 1868-1893, Tulane Univ., Howard-Tilton Memorial Library, Special Colls.
66. Verified by Anne S. Bradburn, Tulane Univ. Herbarium, October, 1978.
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